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St. Bartholomew's Hospital Journal,

APRIL 14th, 1896.

"Æquam memento rebus in arduis
Servare mentem."—Horace, Book ii, Ode iii.

Two Cases of "Appendicular Colic" treated by Operation.

By ANTHONY A. BOWLBY, F.R.C.S.

FOR the notes of the following cases I am much indebted to my house surgeon, Mr. Marshall, and to the dressers of the patients, Messrs. Godwin and Nimmo.

E. R.—, æt. 11, was admitted into Darker Ward on December 19th, 1895, under the care of Mr. Bowlby, suffering from "appendicitis." He had been for some time under the care of Dr. Addison, of Tenterden, who had advised operation, and who had supplied the history of the previous attacks.

History.—Three years ago he first had an attack of pain in his right side in the iliac region; the pain was very acute, causing the legs to be drawn up, and he was very tender on pressure over the right iliac region, though not so on the left side of abdomen; he vomited several times; the pain lasted about four days, and when it passed off there was marked resistance on the right side of the abdo-

men in the iliac region, but no definite mass could be felt; this resistance cleared up gradually.

Since this time he has had similar attacks of sudden onset, and characterised by abdominal pains, sickness, and distension of the abdomen at the following times:

May, 1893; March, 1894; June, 1894 (this was a very bad attack, with symptoms of general peritonitis); August, 1894; November, 1894; March, 1895 (diarrhœa, blood, and mucus in stools); July, 1895; November, 1895.

There has never been any evident swelling in the iliac region except during an attack.

Present condition.—Patient is a healthy-looking boy; he complains of no pain anywhere, and is perfectly comfortable. The abdomen seems quite natural, no resistance of any kind felt in either iliac fossa,—not distended nor tender. Liver dulness normal, spleen cannot be felt. Has no difficulty of any kind on micturition. Urine acid, 1020. Bowels act regularly.

Operation (January 2nd, 1896).—An incision three inches long was made from above downwards and inwards, between the anterior superior spine and the umbilicus, close to the outer border of the rectus muscle. The sheath of the rectus was opened, and the muscle having been drawn towards the middle line, the posterior part of the sheath was incised and the peritoneal cavity opened. The small intestines here were matted together and constricted by three fibrous bands, and were twisted on themselves; these fibrous bands were ligatured in two places and cut between.

The vermiform appendix was then sought for, and was found after a little trouble buried in some adhesions behind the cæcum; it was much swollen and twisted. The appendix was then dissected away from its adhesions, when it was seen that the bands mentioned above were attached to its end. A collar was then made by reflecting the peritoneum, and the appendix was ligatured and cut off, the peritoneum being sewn over the stump so as to completely cover it. The peritoneal cavity was closed with fine silkworm gut. The posterior part of the sheath in the rectus was then sutured, the rectus muscle was replaced in its natural position, and the anterior part of its sheath and the aponeurosis of the external oblique were closed over it. The wound was dressed with cyanide gauze.

January 9th.—Dressed and stitches removed; wound healed; no rise of temperature; has no pain whatever. The patient was kept in bed on his back for three weeks, and was then allowed to get on to a couch. He continued to do well, not having a bad symptom, and was discharged on February 18th, 1896.

An examination of the appendix after removal showed that it contained a concretion about the size of a cherry-stone, and that its walls were very thickened and œdematous. It was not ulcerated.

A. O.—, æt. 25, a nurse, was admitted into Stanley Ward on December 16th, 1895, under the care of Mr. Bowlby, suffering from an attack of relapsing "appendicitis." She had been under the care of Dr. Jones and Mr. Faulkner at Claybury Asylum, and had been advised to go to the hospital for operation in November. At that time, when seen in the ward, the abdomen appeared perfectly natural, and there was no tenderness or swelling; but her admission was delayed, as there was no vacant bed.

History of first attack.—On December 14th, 1893, at about 10 p.m., when quite quiet, she was suddenly seized with acute pain in the right inguinal region, and vomited. The pain was intense, and there was a tender spot to the inner side of the right anterior superior spine, between it and the umbilicus. The pain extended towards umbilicus up

to the ribs and through to the back. She was constipated for several days, and had to take to her bed. No definite lump was to be felt in the abdomen. She got up again in ten days. Since this she has had four similar attacks at the following times:—June, 1894; January, 1895; July, 1895; November, 1895.

Present condition.—The present attack began with pains and sickness on December 15th, 1895, and is already passing away. She complains of tenderness in the right iliac fossa, and of headache. No history of pain or frequent micturition or renal colic. The abdomen appears nearly normal; on palpation there is marked resistance to the inner side of the right anterior superior spine, fading away gradually; also distinct tenderness at a spot $1\frac{1}{2}$ inches to right of umbilicus, between it and right anterior superior spine. Abdomen moves freely on respiration. Temp. $100^{\circ}8$.

December 30th, 1895.—Temperature has been subnormal since December 18th, 1895, and the pain and tenderness have quite subsided.

Operation.—An incision three inches long was made as in the last case, and the sheath of the rectus having been divided the peritoneum was opened; the appendix was found embedded in adhesions about the mesentery, and was enlarged and much thickened. The adhesions were separated and the appendix isolated. A flap of peritoneum was reflected close to its base, and the appendix was ligatured and cut off; the peritoneal collar was then stitched over the stump, and the whole stitched to the omentum around.

The various layers of the abdominal wall were next sutured, and the wound dressed with iodoform and cyanide gauze.

January 6th, 1896.—Dressed, and all stitches removed; wound perfectly healed. The patient was kept recumbent for three weeks, and then on January 25th was discharged, not having any bad signs since the operation.

February 28th.—Is returning to her work. The abdominal wall is quite sound and strong.

An examination of the appendix after removal showed a general thickening and oedema of its mucous lining, and, to a less extent, of its muscular wall. It contained no concretion and hardly any mucus. There was no ulceration.

The symptoms of the two patients whose cases are here recorded may be considered at the present time as diagnostic of recurrent inflammation of the vermiform appendix. It is probable that no other diseased condition of the cæcum or its surroundings would give rise to a series of frequent attacks, each of which was quite independent of any such existing cause as chronic constipation and over-loading of the cæcum. It may further be pointed out that the history of these attacks supplied by responsible medical men was alone sufficient ground for operation; for, on examining the patients, even when under an anæsthetic, nothing abnormal could be felt, and in neither case was there any muscular resistance on pressure, or any material pain on palpation.

With such conditions as these, not only may a diagnosis of inflammation of the appendix be made, but the further conclusions may be arrived at that the inflammation is yet limited to the appendix itself and its immediately contiguous peritoneum, and that there is no inflammation of the cellular tissue of the iliac fossa. Whether there be simple catarrh, or whether the catarrh is maintained by the presence of a concretion, it is evidently not possible to ascertain before operation.

As to the cause of the colic-like pain, the sickness, and the general abdominal tenderness which characterise these attacks, there can be no doubt that they are due to extension of inflammation from the appendix to the neighbouring peritoneum, and during the operation on the boy it was interesting to observe how bands had been formed, which in

future years might well have been the cause of intestinal strangulation.

As to the operation itself, there is, I think, only one comment worth making, and that is with regard to the line of incision. I have already pointed out in a previous number of the *Clinical Journal* the advantage of making the incision along the outer border of the rectus, for I feel sure that the common incision across the muscular wall of the abdomen is more likely to cause a permanent weakness and tendency to hernia. And, whilst again advocating such an incision, I would further point out that by opening the sheath of the rectus and drawing the muscle towards the middle line, not only is the line of incision made somewhat valvular, but the nerve-trunks passing into the rectus can be easily avoided. The advantage of this as compared with dividing directly all structures, including nerves, along the linea semilunaris has been pointed out by Kocher, who suggests with great probability that one cause of hernia after opening the abdomen in the linea semilunaris is that, the nerves going to the rectus being divided, this muscle wastes as do all muscles after nerve section. I would say, in conclusion, that the incision I have mentioned is also a very convenient one for exposing the appendix in cases such as those here recorded, but that where there is already suppuration, and the operation is undertaken simply for the purpose of evacuating pus, the best incision is that which is placed most directly over the seat of suppuration, without regard to other details.

On the Treatment of Serous Pleurisy by Paracentesis.

By SAMUEL WEST, M.D.



PARACENTESIS has become so much the routine treatment of serous effusion, that no doubt it is very often performed when it is not really necessary; and for any long series of cases that would show the natural history of the affection, i.e. the prospects of cure without paracentesis, we have to go back to many years ago, when the operation was not so common. Thus, Louis gives a series of 229 consecutive cases of serous effusion, out of which 224 got perfectly well without paracentesis. Only one of this number died, and then as the result of pericarditis. A similar series of cases has been published by Walsh. Paracentesis is, when properly carried out, such a perfectly simple and safe operation that it cannot, with proper care, do any harm. Yet statistics such as those quoted are of interest and importance as showing that all the good results which follow paracentesis are not necessarily to be credited to the operation.

No arguments are now necessary in favour of paracentesis; all that is necessary is to consider the details of the operation, and when it is desirable to perform it.

1. *Urgent Cases.*—There are certain cases in which paracentesis is not only the right thing to do, but the only thing to be done. This is when the effusion is large and the symptoms severe. Then it may be necessary to tap the patient as soon as he is seen, without a moment's delay. This may be called "Paracentesis necessitatis." Urgent symptoms do not depend upon the size of the effusion only, but to a great extent upon the rapidity of the development of the fluid. Thus, very large effusions may be discovered where there is little in the symptoms to indicate their size; and on the other hand, some effusions, not of very large size, may be associated with severe symptoms, especially if the fluid has developed rapidly. The urgency will of course be greatest where effusions have formed, or re-formed after paracentesis, with great rapidity. Thus,

paracentesis may become urgent within a day or two of commencement of illness, and may have to be repeated in a similar time; for instance, a young man, of about 25 years of age, was admitted on what was the third day only of his illness; his chest was brim full of fluid; paracentesis was urgent, 80 ounces were removed, and in three days' time he had to be tapped again, and the same amount was removed, after which he made a rapid recovery.

I have also removed 127 ounces after only 10 days' illness, so that the rate of effusion may be very rapid. In the first case it was at the rate of a pint and a quarter in the twenty-four hours, *i. e.* more than an ounce an hour.

On the other hand, small effusions sometimes cause such grave symptoms as to require paracentesis before they reach any large size. This is not common with simple effusion, but is more likely to occur when the effusion comes as a complication with some other affection, *e. g.* in the course of phthisis, pneumonia, or morbus cordis; or again, where the effusion is double, *i. e.* on both sides. In all these cases delay is dangerous, and paracentesis should be performed at once, and if the fluid reaccumulates, repeated also without delay even before the symptoms again become severe.

2. In another class of cases paracentesis, though not urgent, is desirable, and that without much delay—*e. g.* where the effusion is very large, although there may be no severe symptoms produced by it at the time. In such cases it is unlikely that the fluid will spontaneously disappear, for, owing to the pressure (if to no other cause), the pleural pump is out of gear, and cannot work until the pressure is relieved; and though in time the relief might come spontaneously, still it will be only after lapse of some time, and all the while the patient is liable to sudden aggravation of symptoms, which would bring the case into the preceding group, and make paracentesis urgent. With large effusions the removal of even a part of the fluid may lead to the rapid disappearance of the rest.

3. A third group of cases is formed by those in which the effusion is of moderate dimensions, and in which no important symptoms are produced by it.

In nearly all these cases, as stated, the effusion will, in all probability, disappear spontaneously in time. What we have to consider is whether paracentesis will accelerate cure, and when it should be performed. Upon these points there is room for great divergence of opinion. Some advocate the earliest possible interference, even as soon as the effusion can be diagnosed. Others would leave it for a period of two or three weeks, and some still longer.

As to early interference it is very difficult to prove the advantage of interference by figures, which are as likely to mislead as to lead to a right conclusion. There seems to be a general consensus of opinion, with which my personal experience agrees, that it is not desirable to perform paracentesis too early during the invagrescent stage unless the fluid reach large dimensions rapidly or severe symptoms be present. As long as the effusion is of moderate dimensions it is best to postpone paracentesis till the active or acute stage of the disease is passed, or, at any rate, until the case has been watched for some little time. Most of the cases at St. Bartholomew's which were tapped had been ill, though not in the hospital, for two or three weeks. In some cases paracentesis was performed at once, being urgent, and in many after only two or three days' stay in the hospital.

On the other hand, opinion is equally strong in favour of not leaving the effusion too long unrelieved, and it is generally felt that if an effusion shows no sign of diminution by the end of the third or fourth week it is well to tap.

The reasons for early paracentesis are chiefly theoretical:

First, that the effusion is checked. Of this there is no conclusive evidence. Some authorities indeed maintain that operation during the active stage excites effusion, and acts as an irritant to the pleura. At any rate, what is constantly observed is that the fluid is rapidly reproduced after paracentesis, just as if no effect had really been produced.

Secondly, that the longer the lung is left compressed by the fluid the more likely it is to be bound down by adhesion, so as to become incapable of re-expansion. Now, although there are a few cases recorded in which extensive adhesions have formed within a few days, such cases are altogether rare, and if adhesions form so early they are usually soft and unresistant, so that they offer no real difficulty to the re-expansion of the lung when the inflammation has subsided and the fluid has been removed or has spontaneously disappeared. In the great majority of cases, even when the fluid has been left for weeks, the lungs come out again without difficulty when the fluid is withdrawn, and there are many cases recorded in which the lungs have re-expanded completely after being compressed by an effusion for many months.

Thus Woillez records a case of complete re-expansion of the lung after an effusion of nine months' duration, and I have seen the same occur after an effusion of still longer duration (eighteen months).

Thus, the two main indications for early paracentesis proving to be based on theory rather than on clinical experience, it follows that there is no need to be in a hurry to perform paracentesis, but that it may be safely postponed for two or three weeks, or even longer if it should be thought desirable.

At the same time it should not be postponed too long, for there can be no doubt that when the acute invagrescent stage is passed recovery is greatly accelerated, that is to say, much time is gained, by the removal of the fluid, even when the effusion is small.

We might therefore sum up the question of paracentesis in this way: There is no reason to hesitate to perform paracentesis whenever it seems in any way indicated. At the same time there is no necessity to be in a violent hurry if the symptoms do not suggest it.

The general frequency of paracentesis is about 50 per cent., *i. e.* in cases of pleuritic effusion now-a-days about 50 per cent. will require tapping. Of the 200 cases from St. Bartholomew's Hospital 92 were tapped = 46 per cent. Of 50 cases under my own care 27 cases were tapped. Of the latter 2 were tapped twice and 3 three times. This agrees exactly with the larger figures from the Hospital records, in which 10 per cent. also required more than one paracentesis.

Contra-indications for Paracentesis.

I really do not think there are any.

i. *Fever.*—In many cases that come under observation the temperature is normal, for the effusion has existed some little time and the febrile stage is passed. In acute cases where the temperature is still high the operation may be performed safely if necessary, but the temperature is not usually materially affected in any way by the operation. It is quite unusual to see the temperature drop after paracentesis for serous effusion in the way it often does after the paracentesis for empyema, yet it may. Usually the fever continues, for a time, much as it was before paracentesis, even when the effusion does not re-form.

Of course, the persistence of high temperature shows that the course of the effusion is still active, and that the inflammation of the pleura has not completely subsided.

It may even happen that paracentesis may be followed by a rise of temperature in a case in which at the time of operation the temperature was normal. This is probably to be explained by the irritation of the pleura, caused by the two layers coming once more into contact, for in many of these cases a return of pain and friction occur.

ii. *Phthisis.*—So many more cases of pleurisy are of tubercular origin than was formerly supposed as to suggest the conclusion, which I think to be correct, viz. that the tubercular origin of an effusion does not affect the question of paracentesis at all.

There is a theory, it is true, that pleural effusion checks the progress of phthisis in the lungs. I do not think that this rests upon any reliable clinical evidence, and I certainly do not agree with it. Within my own experience this theory has been responsible for effusions being left unrelieved for a long time; and yet in the end paracentesis has been followed by complete recovery, without any progress in the disease in the lung.

Pleural effusions, therefore, associated with phthisis, may be treated in the ordinary way; but as the lung is already damaged, care will be necessary if the aspirator be employed, for too great suction may easily cause the diseased lung to rupture.

iii. *Purulent transformation of the fluid.*—More used to be heard of this risk in years past than is heard now-a-days, for, in the first place, this transformation was not unfrequently seen, and, in the second place, it was believed to be the natural course of a serous effusion, which lasted any length of time.

This theory is, however, wrong, and we now know that serous and purulent effusions, depending as they do generally upon different pathogenic organisms, are, as a rule, serous or purulent from the commencement and remain so till the end.

The purulent transformation of a serous effusion means fresh infection with pyogenic organisms. This infection might arise spontaneously from within, *i. e.* from the lung or organs within the chest, or be introduced from without by paracentesis.

In the latter case it is due to dirty instruments or a careless operator, and if the ordinary antiseptic precautions be observed the risk of converting by paracentesis a serous effusion into an empyema may be practically disregarded.

Many years ago Dieulafoy maintained this in opposition to some of his contemporaries, and his results could hardly be excelled by those of recent years—in 180 punctures in sixty-nine cases of pleuritic effusion there was not a single instance of purulent transformation.

I remember to have seen such transformation occur, not altogether infrequently, in my student days, and occasionally also since, but I have never had an instance of it in my own practice, so that I believe such a result to be entirely within our own control.

I have seen also the opposite occur, viz. a purulent fluid become less and less purulent as paracentesis was repeated, and end at last by becoming serous, when the patient rapidly recovered.

The Operation.

An anæsthetic is unnecessary, for the pain of puncture is very slight.

It is also on its own account undesirable, for an anæsthetic deprives the operator, during the removal of the fluid, of the guidance which the patient's feelings otherwise give.

If, on account of fear or excitement, some anæsthetic is thought necessary, a whiff of nitrous oxide gas would be sufficient. At any rate ether should be avoided, on account of the irritation it causes to the air-passages. A pad of lint soaked in a 20 per cent. solution of cocaine, and applied for an hour or two before the operation is performed, will remove the pain of the puncture through the skin, but it will not affect the pain felt as the needle passes through the intercostal spaces, especially if it strike the ribs. A small subcutaneous injection of cocaine would make the operation absolutely painless; but I am not fond of injections of cocaine, for they sometimes give rise to unexpected and unpleasant symptoms. Really the pain is so trifling that it is best for the patient to resolve to bear it without any anæsthetic.

The aspirator is in most cases quite unnecessary, and if employed should be only exhausted to such an extent as to make the fluid flow. The great objection to its use is that unless a manometer be attached (and this does not form part of the ordinary apparatus) it is impossible to say what amount of suction is being employed, especially towards the end of the operation. Too much suction may cause the lung to rupture, and this is the common explanation of pneumothorax occurring during paracentesis.

Rupture of the lung is less liable to occur with serous effusion than with empyema, for the lung is not so likely to be diseased near the surface, yet it is impossible in a case of pleurisy to be certain that the lung is sound, and if by undue suction a phthisical cavity be opened, its contents will be sucked into the pleura, and with them very possibly putrefactive organisms which will convert the serous into a purulent effusion.

Even if the lung be sound there may be adhesions which bind it down in places, so that as the fluid is removed irregular expansion of it will take place, and in this way even a healthy lung might be stretched to such an extent as to give way. The pressure of a few inches of mercury is quite sufficient to burst a healthy lung out of the body, so that the dangers of the aspirator when carelessly used are by no means imaginary. I doubt if any healthy human lung could stand a pressure of more than nine inches of mercury, and many will hardly stand more than three or four.

The safest apparatus for tapping serous effusions consists of an ordinary trocar and cannula with a tube extending to the floor. This has been called syphonage as distinguished from aspiration. The tube, when filled with fluid, acts as a syphon.

Under this arrangement the fluid flows away under a negative pressure of from 18 to 24 inches of water, *i.e.* roughly speaking, the distance from the chest to the floor. This is equivalent to about 1½ inches of mercury. The fluid, as long as it flows, will remain under the same constant negative pressure, and not, as when the aspirator is used, under a negative pressure, which constantly varies from almost zero to even several inches of mercury.

The end of the tube should be placed in a small vessel filled with water, so that no air may enter the pleural cavity, if it should so be that the intra-thoracic pressure is negative. I have seen air gain access to the pleura for this reason, but of course if the mouth of the tube be under water such an accident cannot occur. Usually there is pressure enough in the pleura to fill the tube, and then it acts as a syphon, but if not, the syringe may be necessary to fill the tube before the syphon can act.

The effusion should not be removed too rapidly, and therefore the needle selected should not be a large one. Usually the middle-sized needle supplied with the aspirator, of about a sixteenth of an inch in diameter, is large enough.

The amount necessary to be removed.—There is no need to limit this by any theoretical consideration. If a syphon tube be used, I should recommend that as much be taken away as will flow away easily. How much this will be in any given case it is impossible to foretell; for even with large effusions it may happen that little can

be removed, on account of unpleasant symptoms which arise, but if the pleura can be emptied, or nearly so, so much the better.

I make it a rule to take away as much as I can get without discomfort to the patient, and I have never had reason to think this wrong; but then I rarely use the aspirator, and this I believe to be the reason why. It is true that the removal of a small amount of fluid is often followed by the spontaneous disappearance of the rest, but this cannot be calculated upon, and if the pleura has been only partly emptied and the fluid re-form, paracentesis will become necessary all the earlier. Besides, it is a good thing to get the lung to expand as freely as it can without risk or discomfort.

I have occasionally, after emptying the pleura as far as I could with the syphon, affixed the aspirator to try how much more I could get away under greater suction. Frequently I have failed to get more than an ounce or two, and that with the production of distress to the patient; *e.g.* after removing thirty ounces with the syphon a suction of -30 inches of water was necessary to obtain ten ounces more, and this caused much cough and pain in the chest, and was all that the patient could bear.

From these considerations it follows that all the fluid that can be removed safely can usually be taken away with the syphon alone, and that the aspirator is not necessary.

The amounts removed of course vary—sixty ounces is a fair average, but though it may greatly exceed this, any amount above 100 ounces is uncommon.

Among the 250 cases analysed, 105 ounces were removed once, 115 once, 120 three times, 127 once, 130 once, 139 once. Besides these cases I have twice removed 150 ounces.

The largest amount recorded is, I believe, in a case of Leibermeister's, viz. 7 litres = 245 ounces.

When the paracentesis has to be repeated, the amounts removed usually decrease on each tapping, but not always.

	1st Parac.	2nd Parac.	3rd Parac.
1	100	40	10
2	63	94	—
3	50	50 (6 days later)	27 (5 days later)
4	29	60	43
5	90	100 (14 days later)	—
6	50	57 (4 days later)	—
7	70	90	40

The place of puncture.—This should of course be as far as possible in the centre of the dull area, but as in the majority of the cases of serous effusion the fluid occupies the lower part of the pleural cavity, the common spot for puncture is on the horizontal level of the nipple, in the fifth or sixth intercostal space in the mid-axillary or posterior axillary line. A position lower than this is not so convenient, for as the fluid flows the diaphragm quickly rises, and reaching the mouth of the cannula, may choke it.

Mode of operation.—The needle should be held firmly in the hand, at right angles to the chest wall, and pressed with firm and constant pressure slowly inwards. Directly the prick of the needle is felt the patient will shrink and change his position; it will then be difficult to know where the point of the needle is, and it will almost certainly strike the rib, which will cause the patient pain, and may turn or break the point of the needle. If the needle be still forced on it may slip over the edge of the rib and enter the chest with a jump, and thus go further than was intended or desired.

To avoid this, before the needle is used the finger or thumb of the other hand should be firmly pressed down into the intercostal space at the place where the puncture is to be made, and the needle then passed over the centre of the nail. By this means, even if the patient shrink the place will not be lost, and the needle will be easily introduced through the space, and will not strike the ribs. Easy as it may be thought to avoid the ribs in paracentesis, it is in practice by no means so easy as it seems.

Risks of the Operation.—There are practically no risks at all if ordinary care be used, and the diagnosis is correct.

Of course it is in all cases important to ascertain carefully, before the operation is commenced, where the heart is placed; and this may be determined by auscultation if by no other means. The diaphragm is very unlikely to be touched if the needle be inserted in the place recommended, and directed towards the middle of the chest. A mere puncture of the diaphragm is, however, of no serious consequence, and I have even known, in a case of ascites, the abdomen emptied through a needle inserted into the right side of the chest, to remove an effusion which was thought to be in the pleura and was not, so that the diaphragm was penetrated.

Nor is the lung likely to be injured. It is, I suppose, often pricked, especially if the needle pass into the chest with a jump. A mere

puncture will, however, do no harm, and laceration of the lung by the needle I believe hardly ever occurs. If the lung is torn during paracentesis it is generally not due to the needle, but because the aspirator has been used and too much suction employed.

Wounding of the intercostal artery is a danger more imaginary than real. I have never seen such an accident occur, though a few cases of it are recorded in literature.

(To be continued.)

The Blood Parasites of Malarial Fevers.

By JAMES HUSSEY, M.R.C.S.

A Paper read before the Abernethian Society on November 21st, 1895. (From the Pathological Laboratory.)



R. PRESIDENT AND GENTLEMEN,—It is my purpose in this paper to give a short account of the discovery of the parasites occurring in the blood in malaria, and of the views which are now most generally held as to their nature and meaning. The reasons which led me to select this matter as the subject of my paper are, in the main, two: *firstly*, it is a subject of considerable practical and theoretical interest; and *secondly*, it is a matter which has, so far, received comparatively little attention in England—far less, indeed, than its importance seems to merit.

The modern text-book of medicine, with its rapidly recurring editions, keeps so up to date on most questions, that even he who is most pressed for time can get at any rate an outline of the most recent advances in technical knowledge. And hence it comes to be very difficult to find a subject of any great importance to medicine whose details are not readily accessible to any one interested in them.

But for some reason or other the subject of the malarial parasites has been almost entirely neglected by English works on medicine. For example, the edition of *Fagge's Medicine* of 1891, eleven years after the original discovery of the parasites, devotes to their consideration exactly ten lines in an account of the etiology of the disease extending over five or six pages. And this omission can scarcely be due to the fact that the subject is considered unimportant in face of the degree of detail with which the other aspects of malaria are considered. Indeed, I think that on at least two distinct grounds the question deserves some little attention.

In the first place its practical results as regards malaria itself, especially as regards diagnosis, have been of inestimable value. Malaria is one of the most widespread and disastrous diseases on the face of the globe, and although most of us may have to deal with it only in a most limited degree, yet we must remember that in many of the most important of our colonies and dependencies it still forms one of the most serious factors in the lives of the inhabitants, especially European inhabitants. For example, of 10,000,000 English soldiers stationed in India between 1850 and 1875, there were actually over 400,000 admissions to hospital for malaria, and these formed something like 60 per cent. of the total admissions to hospital for all diseases. So that though in England itself malaria has lost much of its influence, yet in these more indirect ways it is of supreme importance to the nation, and especially of course to those who are likely to have to live or practise in malarial colonies. And even in England, even, indeed, at St. Bartholomew's, the question of diagnosis in cases who have been exposed to malarial infection not infrequently arises. And then is necessary some acquaintance with the methods of discovering the parasites.

But apart from all practical considerations there is a second ground for regarding this question with some interest—namely, that it is a new departure in pathology, that subject on which medicine has lately been so dependent for its advances.

Any new pathological discovery is of importance, not only for its own sake, but for the possibility of extension to other subjects.

The incalculable effects on medicine which have already resulted from the recent discovery of the part played by bacteria in many diseases are enough, surely, to render the discovery, in other diseases, of totally different parasites of possibly overwhelming importance to medicine generally, for this discovery opens up possibilities of explaining many other conditions hitherto obscure.

These and similar reasons make me think it may not be altogether

waste of time to devote a short time to the consideration of the subject.

The General Features of Malarial Fevers.

Under the term malaria are grouped together a number of diseases which differ greatly in detail, but in their main features strongly resemble one another, so that quite apart from their causation they form a clinical group.

With rare exceptions they are characterised by fever, and this fever shows a marked tendency to recurrence or exacerbation at regular intervals. The fever is generally associated with marked constitutional disturbance, the nature and degree of this varying greatly in different cases.

The disease, after persisting for a certain time, may disappear spontaneously, or may lead to death; but on the other hand it may, if untreated, persist almost indefinitely; in this it differs widely from most of the so-called specific fevers. But in any case it shows a very marked tendency to recur, even after long intervals of apparent cure, and after removal of the patient from all possible sources of re-infection. And either if the primary disease be not cured for a long time, or if the patient suffer many recurrences, there tends to arise a chronic so-called cachectic condition which forms one of the most serious aspects of the disease.

The geographical distribution of malarial fevers is extremely wide. Roughly speaking, the worst and most extensive malarious areas occur in the tropical and sub-tropical zones, in the greater part of which these diseases form one of the most serious factors in the life of the inhabitants.

In passing from the tropics to more temperate zones, we find still vast districts where the disease is prevalent, though the type is generally less severe than in the tropics. In Europe mild malaria occurs almost all over the continent, and very virulent forms still exist in some regions, as, for instance, the marsh district around Rome. In England there is now but little malaria (except in persons who have been abroad), and what there is is confined to certain areas, and is very mild in type. But this has not always been so. Watson records the fact that both James I and Oliver Cromwell died of this disease, which they contracted in London, and Sydenham's account of epidemics about 1660 renders it evident that it was then far from uncommon.

People of all ages are liable to be attacked by malaria, and Watson quotes from Russell's *History of Aleppo* the description of a case of its occurrence *in utero*. "The woman," he says, "had a tertian ague, which attacked her of course every other day; but on the alternate days, when she was well and free, she felt the child shake; so that they both had tertian ague, only their paroxysms happened on alternate days. Bark was prescribed for her, and it cured the little one first, and afterwards it cured the mother." And other cases of intra-uterine infection have been described more recently.

There is one other fact as to etiology which seems very interesting in view of our present knowledge of the subject, and that is that the natives of tropical countries, especially negroes, are far less liable to the disease, and take it far less severely, than do Europeans.

Into details of the clinical classification of the diseases I shall not enter, nor is it necessary to do so. But the main subdivisions must be clearly understood in order to get a proper idea of the classification of the parasites concerned. There are, roughly, two broad groups of cases: (1) The simple truly intermittent fevers; (2) A much more complicated group, in which the fever, though it may primarily be intermittent, shows a marked tendency to become continuous and irregular, though it may still show periodic increases.

The first group, the simple intermittents, include the milder cases of the disease. In temperate zones they occur chiefly in the spring (the second group of fevers occurring almost exclusively in the summer and autumn). It has been known for a very long time that spring agues tend to be far less serious than those of summer and autumn. They were even thought by some to be beneficial, and there is an ancient rhyme to the effect that "an ague in spring is physic for a king." These intermittent fevers are divided into three classes, quotidian, tertian, and quartan, according as the febrile attacks occur daily or at intervals of two or three days.

The febrile attacks in these fevers recur with great regularity, scarcely ever become continuous, and are very rarely dangerous to the patient if treated. However, if untreated they may persist indefinitely and always tend to recur, and repeated recurrences may lead to a cachectic condition marked by two main symptoms—profound anæmia and great enlargement of the spleen.

The second group of fevers is not nearly so definite as the first. It includes all the severe forms of the disease, and from the time of

its occurrence has lately received the name of the "summer-autumn fevers."

These fevers differ very widely in their symptoms, which may be very severe, and indeed rapidly fatal, or comparatively mild. The fever is either irregular from the beginning, or may commence as a more or less marked intermittent, which tends soon to alter in character. The other symptoms vary in different cases, and this has given rise to many elaborate clinical classifications of the different forms.

The very severe types of cases are generally spoken of as malignant or pernicious, and in these cases one special symptom may be so marked as to entirely mask the other symptoms. Perhaps the best known example of this is that form in which cerebral symptoms are the main feature of the disease, the patient either becoming delirious or more frequently comatose. But apart from these cases with one very severe symptom, there are other cases which rapidly become serious from the extreme constitutional disturbance accompanying the fever, and to these also the name malignant or pernicious is commonly applied.

History of the Pathology of Malarial Fevers.

Our knowledge of the parasitology of malaria practically dates from 1880. Before that time scarcely anything as to its ultimate nature beyond the broad etiological facts was known. One gets, it seems to me, a vivid idea of the progress of knowledge on the point by comparing the opinions of physicians of modern times with those of a century or so ago. And in looking up this point I came across two remarks, one of Sydenham's in about 1660, and the other made by Trousseau as nearly as possible 200 years later, and about thirty years ago, which form together a fair account of the progress made in that time.

Sydenham, after giving an account of an ague fit, goes on to consider the cause of the intermittence, and says—

"With these premises we may see why the fit returns when the patient seems out of danger. The febrile matter still hangs about him. Like broods of bees that grow gradually at stated times, the latent matter, regulated by the character of its type, presents itself anew. It provides fresh work for nature, and runs the same course that it did before. Now if any one should ask me why such a secret power has not been sufficiently reduced by the previous effervescence—why it gives rise to a new tragedy,—and why, instead of taking one, two, or three days to come to maturity and to excite a second paroxysm, its progress varies with the nature of the intermittent—if any one, I say, requires answers upon all these points I am ready to confess my ignorance. Etiology is matter of difficulty, and I choose to keep my hands clear of it."

Trousseau, in his clinical lecture on intermittent fevers, gives an account of a theory practically identical with Sydenham's, and comments on it in these words: "Were the recurrence of the paroxysm dependent on a remaining excess of morbid matter not expelled in the previous crisis, it would still remain to be discovered why the potency of this morbid matter increases with greater or less rapidity according to the different kinds of fever. . . . How does it come to pass that an individual struck by a quartan should feel perfectly well a quarter of an hour before the return of the paroxysm, although the morbid matter then brought into action must have been previously quite ready to act."

On account of these difficulties he decides that the cause of the intermittence must depend on some property of the central nervous system, not on the action of a recurring poison in the blood—a view of the question which, in face of the recently acquired knowledge of the etiology of the disease, appears distinctly further from the mark than that of Sydenham.

Nevertheless, during that time theories as to the morbid substance concerned had not been altogether wanting.

It had long been known that marshy districts were the favourite, though not the exclusive seats of malaria, and a fairly obvious deduction to be made from this was that the cause of the disease was the inhalation of the mists and emanations from the marshy soil. In 1716 Lancisi published a work on these fevers in which he gave, as the exciting cause, certain animalcules formed by putrefaction of vegetable matter in swampy regions; and from that time on there were from time to time fresh discoveries of the cause of the diseases—at times infusoria, at others the spores of algae, bacteria, and numerous other microscopic objects.

But none of these discoveries attracted much attention till, in 1879, Klebs and Crudeli discovered "the malarial bacillus." They passed quantities of air near the ground of marshes over plates coated with glycerine jelly, and found that certain bacilli grew on these. They then found the same organisms in the water and soil of malarious

districts. They made cultures, which appear to have been very impure, by introducing mud into culture media. From the growths obtained they made other cultivations, and injected these into animals with the result, as they stated, that they produced symptoms analogous to those of malaria. Great doubt has always been thrown on the malarial nature of these symptoms—indeed, it is yet unproved whether animals are liable to malaria.

However, immediately after the publication of this work various pathologists in Italy obtained results which led them to agree with Klebs. Marchiafava even saw the bacilli in large numbers in the blood of a patient during an apyretic interval.

This was the position of things in 1880, when a French army-surgeon, Laveran, who was working in Algiers at the subject of pigmentation in malaria, noticed, while examining the blood of patients, certain spherical and crescent-shaped bodies containing pigment but no nuclei. Soon after this, while yet uncertain of the nature of these bodies, he saw certain spherical bodies with long flagella in a state of violent movement. From this time he seems to have been convinced of the parasitic nature of these various bodies. After examining some hundreds of cases he published his results in 1881.

It will be more convenient to deal with the subsequent history of the discovery when we are considering the details of the life history of the organisms.

The Preparation of Specimens of Malarial Blood.

The manipulations and processes involved in the preparation of blood specimens to demonstrate the morbid appearances in malaria are very simple indeed, but they need to be carried out with considerable care, and a small amount of practice in making blood preparations is necessary before constantly good results can be obtained.

Blood is so delicate that a very small amount of rough treatment, or a very short exposure to abnormal conditions, may render it quite useless for histological purposes.

There are two points on which, it seems to me, depends much of the success or failure of the preparation. They are, *rapidity* in all the operations, so that the blood is exposed as little as possible to air, and *absolute cleanliness* of everything which comes in contact with the blood, especially the skin of the patient and the slides and cover-slips. If these two points be attended to, very little practice is necessary to make good preparations.

The blood should be examined, both fresh and as a dried, stained, film. I think it will be found that the detection of the abnormal appearances is rather easier in fresh blood than in dry films, though they are often very obvious in either way.

In examining fresh blood the patient's finger is carefully cleaned and very thoroughly dried, and then pricked. A drop of blood is gently squeezed out and wiped off, and a second very small drop (not much larger than a pin's head) pressed out. A cover-slip, held by its edges, is made to just touch the drop, and then at once dropped on to a perfectly clean slide. The cover-slip must be very thin, or the preparation will almost certainly be useless; a No. 2 cover-slip is no good. No pressure whatever should be applied to the cover-slip. The cover-glass is then ringed with vaseline to prevent evaporation. No further treatment is necessary. A preparation of this sort will generally last for half an hour or longer before deteriorating much.

Dried films are prepared by taking up a minute drop of blood on a cover-slip, which is then brought into contact with another slip. When the blood has spread out the cover-slips are carefully pulled apart, slid over one another so as to leave on each glass a very thin film of blood. This film should be the same thickness all over, and so thin that it scarcely appears pink on looking through it. The film thus made may be treated in several ways. It may be dried naturally or be put at once into a mixture of alcohol and ether for some minutes; or again, it may be held while still moist in the vapour of 1 per cent. osmic acid or formalin. The last two methods have, I am inclined to think, distinct advantages. The vapour fixes the structures at once, and so keeps them in their natural condition; and apart from this I find it very much easier to make good preparations by its use than without it. The film prepared by one of these methods is passed over a small bunsen flame several times, and then stained.

A great number of special methods of staining have been devised, but most of these are quite useless for clinical purposes from their complexity; and perfectly satisfactory results can be obtained by quite simple methods, e.g. that recommended by Kanthack and Hardy for staining blood, which consists in the use of eosin and methylene blue. Undoubtedly the simplest and best stain to use is methylene blue. The ordinary Löffler's solution, made by mixing a

saturated alcoholic solution of methylene blue with a 1 in 1000 solution of potash, answers perfectly well, and has the great advantage of being in common use. The dried film, after being heated, is immersed in this stain for twenty to forty seconds, washed in water and dried by blotting paper. It is then gently heated again, and mounted in xylol balsam. It is easy and often of importance to double-stain by using eosin as well as the blue. The film is first stained in eosin ($\frac{1}{2}$ per cent. in 70 per cent. alcohol) for about twenty seconds, washed, dried, and heated, and then stained in methylene blue as before. But it needs more practice to acquire certainty in this method, especially if the stains are freshly made.

The Abnormal Appearances of Malarial Blood.

We have now to consider what are the changes to be expected on examining microscopically the blood of a patient suffering from malaria.

In the first place most of the changes are to be looked for in the individual corpuscles, and especially in the red corpuscles. Most of these will appear perfectly normal—round, pale yellow, homogeneous discs. But here and there, perhaps only at wide intervals, a very striking appearance may be seen. In the middle of what is obviously a red corpuscle is a body rather paler in colour than the rest of the corpuscle. Its edge is irregular, but fairly well defined; its size may be anything from a very small dot to a mass nearly filling the corpuscle. In its substance, unless it be very small, are a number of brownish black pigment granules, which may be at rest or in a state of violent, more or less streaming, movement. This movement when marked is very striking indeed. If the body itself be carefully watched it may be seen to gradually change its shape in an amoeboid fashion—this movement being specially well marked in the smaller forms.

The largest of these bodies may have around it a mere film of corpuscle, or may be quite free in the plasma.

At certain stages in the course of the disease there are seen in the corpuscles bodies similar to these large forms but differing in structure. The pigment, instead of being scattered, is collected in the centre, and the substance of the body instead of being homogeneous shows radial striation, which, gradually becoming more marked, leads to the separation of the original body into several small masses containing no pigment.

The whole appearance of these various forms of amoeboid or spherical, pigmented, intra-corpuscular bodies and of the modified segmenting forms is most peculiar and striking. It is not likely to be mistaken for any of the appearances of normal blood, and there is no other known pathological change at all resembling it.

The occurrence of these intra-corpuscular changes is the point to be looked for first in all cases. Its presence is pathognomonic; its absence, at least if several examinations be made during the course of disease, almost excludes the possibility that the patient concerned is suffering from malaria. But in a certain proportion of cases other abnormal appearances may be seen with or without the intra-corpuscular bodies we have just considered.

The commonest is the occurrence of certain crescentic (or ovoid) pigmented bodies in the plasma. These crescents are extremely characteristic, and when once seen can be mistaken for nothing else. They are clear, pale, homogeneous bodies with a marked highly-refractile border. They are very constant in size, their long diameter being about that of a red corpuscle. The pigment is generally collected in a mass or ring near the centre of the body. Amoeboid movement is never seen.

They generally appear to be quite free in the plasma, but very careful focussing generally shows a fine curved line joining the two forms of the crescent, and this line may often be seen to be the edge of a delicate film attached to the concavity. This film, as will be seen later, probably represents the remains of a red corpuscle in which the crescent originally was situated.

Besides the intra-corpuscular amoeboid or spherical bodies and these crescentic forms, there is one other appearance, seen only some little time, five minutes or so after removal of the blood from the body.

From the periphery of pigmented spherical bodies, similar to all appearances to the adult intra-corpuscular parasites, may be seen to shoot out suddenly one or more long flagella which lash about violently in the fluid, and lead to great disturbance of neighbouring corpuscles. These flagella may break off and swim about free in the plasma. It was the observation of these forms which led Laveran, and subsequently several other observers, to regard the bodies seen in malarial blood as parasitic organisms.

Besides these various new bodies found in the corpuscles or plasma, there is one other change in the blood which may at times be ob-

served, and that is the presence of pigment in the leucocytes. This is of importance diagnostically, for it may be seen even when there are no other abnormal appearances in the blood.

The appearances seen in a properly prepared dried film are very similar to those of the fresh blood we have just been considering, and the fact that the abnormal bodies stain in a perfectly regular manner renders them generally very obvious.

All these bodies take up methylene blue very easily, so that in a specimen stained with this dye the intra-corpuscular bodies of all sizes, the large extra-corpuscular forms, and the crescentic or ovoid bodies, are all markedly stained, while the normal red corpuscles and the remaining parts of the affected corpuscles are scarcely stained at all. If eosin be used as well, the contrast with the pink corpuscles is still more marked.

The nuclei of the leucocytes stain, as in normal blood, markedly blue, and if eosin be used there will, in a great number of the bodies of the leucocytes, be seen, crowded together, fine or coarse pink granules producing a quite characteristic appearance, which can scarcely be mistaken for any of the abnormal appearances we have to deal with.

So that in methylene blue preparations the only deeply-stained parts are the nuclei of the leucocytes and the various forms of parasitic bodies, and these two varieties of bodies do not stain in the same way.

In the first place the blue colour of the nuclei is much more marked and vivid. It is often, indeed, quite a different tint to that of the parasites, which are rather grey-blue than pure blue. This difference of colour is often very marked, and serves to pick out parasitic forms very easily even with low powers.

Again, the nuclei when examined with a high power always show deeply-stained chromatin filaments, the rest of the nucleus being lightly stained or not at all. On the other hand, the staining of the parasites is generally rather diffuse. In the spherical bodies the staining is generally most intense at the periphery and less marked centrally, and the crescents commonly stain most deeply at their extremities.

In no forms of the parasites is there seen a stained nucleus, and this is a point of great importance in diagnosing the nature of bodies in the blood. Whether there is really a nucleus in these bodies or not is another matter, but at any rate it is totally different in appearance when stained from the corpuscular nuclei, for it is represented if at all by the unstained central portion of the parasite.

The Nature, Life-history, and Classification of the Parasites.

These being, then, the appearances commonly seen in malarial blood, how are they to be explained?

There is considerable difficulty in attempting to give in brief any account of the organisms causing the blood changes, for the simple reason that scarcely any two observers are entirely agreed on all points. There has, in the last ten years, been produced a mass of work by different observers, much of which has become generally accepted, but of which part has received but partial confirmation or none at all. Hence any account of the changes taking place in malarial blood must necessarily involve details which are not quite generally accepted at present.

The position of the main questions can best be understood by briefly referring to the history of the views held since Laveran's discovery in 1880.

The announcement of this discovery, coming as it did when the Klebs Crudei bacillus seemed to have settled for good the nature of the disease, was received on all sides with considerable scepticism. But in the course of a few years his observations were confirmed from all parts of the globe by most competent men. One after another, those who saw the appearances Laveran had described became convinced that they represented a *living parasite* in the blood. For some time many of the upholders of the bacillary theory of the disease, including Marchiafava and many of the Italian investigators (who on account of the extensive prevalence of the disease in Italy have done a great deal of work on the subject), explained these appearances as being due entirely to degenerative changes in the blood-corpuscles. But they gradually gave up this idea, and for the last ten years much of the standard work on the subject has emanated from Italy.

It is, I think, only necessary to realise the remarkable agreement on the part of eminent pathologists as to the real presence of a living parasite, to estimate at their true value the "discoveries" which even now occur from time to time, of the fact that all the changes are degenerative. It is *not* a new idea, as appears to be thought by some people, but at the best is only a stage through which more

sceptical pathologists have gone before satisfying themselves of the parasitic nature of the blood changes.

We may, I think, take it as almost universally accepted that we have to do with a living parasite in the blood, and the next question which arises is—What is the life-cycle of this organism? What is the meaning of the different forms seen in the blood? What relation does the organism bear to the course of the disease? and lastly, Is the organism the same in all cases, or are there several species?

When Laveran published his discovery he did not attempt to answer these questions. He described with great accuracy all, or practically all, the different forms which occur, and regarded them as different phases of an animal parasitic organism. He found that they disappeared under the influence of quinine, and suggested that they were the essential cause of the manifestations of the disease. He laid great stress on the flagella, which, when free in the blood, he assumed were the highest form of development of the organism.

During the next few years these observations were confirmed and somewhat extended; but no great advance was made in the knowledge of the life of the organisms till 1887, when Golgi published the results of work which is second in importance only to Laveran's original discovery.

He studied the simple spring fevers, quartan and tertian, and showed that they depend on allied, but different, organisms, and that there is an intimate relation between the course of the disease and the development of the parasite, of which development he gave the first real account. So that we have in Golgi's work three new essential points—(1) an account of the development of the organism; (2) an account of the relation this development bears to the course of the disease, and (3) a separation of at least two types of parasite corresponding to different types of fever. And in essential features nearly all the work since then has consisted of the confirmation and extension of Golgi's work, and in the elucidation of details.

(To be continued.)

Three Cases of Cesarean Section performed by Dr. Griffith in "Martha."

With Notes and Comments by ERNEST W. GROVES, M.R.C.S.

THE following cases do not require much comment from me, as the notes appended are sufficiently full to give all the details of the operations.

To show how rare this operation has been at this hospital, I have it on the authority of the late steward that forty years had elapsed since it had been performed prior to the present three cases.

There is no doubt this is due largely to the fact that the operation is now attended with so very slight risks compared to what occurred fifty years ago, and also that opinion has undergone a considerable change with respect to the relative importance of the different factors concerned in deciding between Cesarean section and its alternative—craniotomy.

In discussing the question of Cesarean section, the most important and most practical point is, what circumstances justify the operation?

In the majority of text-books the only point which is treated in this connection is the case in which the operation is demanded—that is to say, where there is no alternative. All are agreed that any circumstance which narrows the pelvic diameter to 2 inches or less leaves no choice of treatment when pregnancy is advanced to full term. But it is in cases of a smaller degree of obstruction, in which craniotomy is possible, that the difficult question arises as to the choice of operation.

The various factors which decide this may be grouped under three heads:

1. The actual condition obstructing labour, together with the condition of mother and child.
2. The advantages and dangers of Cesarean section.
3. The advantages and dangers of craniotomy or other method of destruction of the fœtus.

In all three cases which I record the obstruction to labour was the contraction of the pelvis due to rickets. The first and third cases had a true conjugate of 2½ inches; they were both primiparæ, and the event proved that the contraction was very near one which offered no alternative. But it is necessary to bear in mind that this all-important measurement cannot be accurately made before delivery. In the first case it will be noticed that all the external measurements

are considerably smaller than in the third, although the true conjugate was in both cases the same. And further, it is not only impossible to find out accurately what the pelvic measurements are, but many other factors, such as the size of the child and the qualities of the uterus, are quite incapable of measurements. The second case is one of a multipara, and this illustrates several points which aid the decision, and which are lacking in the others. She had had two previous confinements, and had been delivered on both occasions by the direct destruction of her child; also her pelvis was accurately measured at the last confinement. She herself was very anxious to have a live child, and fully understood the nature of the operation which was proposed to her. In addition to the facts above mentioned, the general condition of the mother and child have to be considered. Of course, if the child is dead an abdominal operation would not be resorted to; and as a matter of fact the very early rupture of the membranes, with the almost complete loss of the liquor amnii and the liability to prolapse of the cord, give a very short time for the child to survive if the operation is to be done.

In the second case the uterine contractions were so violent that I feared for the child's life, and gave morphia gr. ¼ hypodermically, which had the desired effect, but also made the uterus very sluggish at the time of operation. Probably chloroform administered in a small amount would be a better means to employ to lessen the pains in such a case. As regards the advantages and dangers of Cesarean section I have little to say that is new, but these cases illustrate many points so well that I must briefly mention them.

First, and of most importance, the child's life is saved, instead of being deliberately sacrificed. Then the woman is prevented from becoming pregnant again by the ligation of the Fallopian tubes. Therefore the risks of a single Cesarean section must be weighed not against those of a single craniotomy but against those of repeated craniotomies. The risks are with present methods very small indeed, and may be considered on the whole much less than those of the majority of abdominal operations.

It will be seen that all three of the present patients made an exceptionally rapid and uneventful recovery. There was a marked absence of shock, sickness, and hæmorrhage, so that the convalescence resembled that of a difficult labour much more than that of an abdominal section.

Sepsis can with modern precautions be quite excluded, because the operation is so perfectly straightforward, whereas this cannot be said of such an operation as craniotomy, when all the neighbourhood of the field of operation is septic, and where everything is done in the dark. And shock is very slight, considering the nature of the operation; this is due, no doubt, to the fact that the abdominal viscera undergo so little handling. In none of the following cases were the intestines so much as seen throughout the operation, as the pregnant uterus completely filled the abdominal wound.

Hæmorrhage is, then, the only risk left to consider. There is a general idea that the bleeding from the uterine surfaces is something terrific and uncontrollable, whereas in reality it is nothing like so formidable as a severe *post-partum* hæmorrhage, because it can be dealt with by surgical means.

It remains, then, only to briefly consider the alternative to Cesarean section—namely, destruction of the child and extraction *per vias naturales*.

In the first place, let me point out that it is the only alternative in such cases as the present; for with a conjugate of 2½ inches, to apply forceps and try to extract will certainly kill the child, and will preclude Cesarean section both by destroying the child and by bruising the maternal parts, so that it is merely a useless preliminary to craniotomy.

In cases of extreme pelvic contraction craniotomy is a long, difficult, and even dangerous operation. The injury to the soft parts, the amount of debris left in the uterus, the difficulty of making any operation done through the vagina aseptic, concur to menace the life of the mother. At the same time it involves the deliberate destruction of the child's life.

The outcome of the above argument is that craniotomy should never be resorted to unless the child is already dead or the mother's symptoms urgent.

If the pelvis have a conjugate of 3½ inches, forceps will probably deliver a live child. From 3½ to 3 inches are justifiable, but it is here that symphysiotomy has its range. Below 3 inches Cesarean section is a radical operation which saves one life and secures another against further risk at the expense of what after all is only the ordinary danger of any surgical operation.

CASE 1.—Lydia H—, primipara, æt. 26, admitted November 3rd, 1892. Rickety flat pelvis.

Measurements.—Iliac spines 9½ inches, iliac crests 9½ inches, ex-

ternal conjugate $5\frac{1}{2}$ inches, diagonal conjugate $2\frac{3}{4}$ inches, true conjugate $2\frac{1}{4}$ inches.

Married three years, husband alive.

Labour at full term. November 2nd, at 6.30 p.m. labour pains commenced. Was seen by Dr. Hewkley in private, who sent her to the hospital, where she was admitted to Martha at 1.30 a.m.

November 3rd, at 3.30 a.m., Dr. Griffith performed Caesarean section. Abdomen opened by an incision from the navel to within two inches of the pubes. The anterior wall of the uterus presented in the wound and displayed a dark purple surface covered with tortuous veins.

An incision an inch long was made through the uterine wall in the mid-line at the point of its greatest circumference. After the uterine cavity had been reached the incision was enlarged downwards to seven inches with scissors. There was a sudden gush of venous blood from the cut edges of the uterine wall as each sinus was opened, but this was easily controlled by digital pressure on the sides of the wound.

The membranes, which had hitherto remained intact, were now ruptured, and the child extracted from the uterine cavity. The fundus and neck of the uterus were now grasped by two assistants, and the placenta was detached, partly by compression and partly by the uterine contraction, which was vigorous.

Ten minims of ergotine were injected into the buttock.

The edges of the uterine wound, which had now contracted considerably, were brought together by twelve thick silver wire sutures passed through the whole thickness of the wall, and four more thin silver wire sutures passed through the superficial parts of the uterine wall. These were all twisted, the ends cut quite short and turned downwards.

The Fallopian tubes were closed by a single fine silk ligature tied round each.

Abdominal wound sewn up with silkworm gut, and dressed with cyanide gauze.

With the exception of a slight attack of albuminuria, which was at its height on the eighth day, the patient made an uninterrupted recovery. Stitches removed on seventh day. No vomiting. Bowels opened the day after the operation. Began taking solid food on the fifth day. Temperature never rose above $100^{\circ}2$.

The child (christened Bartholomew Griffith) was a healthy well-developed boy. He took the breast well from the second to the seventh day, but then had to be weaned, because of the scantiness of the mother's milk.

Discharged quite well on December 1st, twenty-eight days after the operation.

CASE 2.—Annie S—, multipara, æt. 30, admitted December 28th, 1895. Rickety flat pelvis.

Measurements.—Iliac spines $10\frac{1}{2}$ inches, iliac crests $10\frac{1}{2}$ inches, external conjugate $6\frac{1}{4}$ inches, diagonal conjugate $3\frac{1}{4}$ inches, true conjugate $2\frac{1}{4}$ inches.

Past history.—She did not walk until she was four years old. She attributes this to a fall when a baby, and can give no history pointing to rickets.

Pregnancies.—Two. First nine years ago; delivered at full term under chloroform. The child was dead, and she does not know any details. Second four years ago at Queen Charlotte's. Labour lasted thirty-six hours. Craniotomy was performed. Married 1891; husband alive.

Present general condition.—Rather a sallow unhealthy-looking woman.

Skeletal characters.—Sternum is arched from above downwards. Ribs are thickened at junction with cartilages. Lumbar spine shows marked lordosis. The upper extremities of both tibiae and lower of both ulnæ are thickened.

History of pregnancy and labour.—Was seen when four months' pregnant, and advised by Dr. Griffith to wait till full term for Caesarean section. The pregnancy was normal in every way.

December 26th, when she believed herself to be eight and a half months' pregnant, she began to have labour pains, which continued to increase in force and regularity until the evening of the 27th, when she came up and was admitted.

December 28th.—*Physical examination* at 3.30 a.m. Uterus reaches up to costal margin, and foetus can be felt with its back to the right. Foetal heart heard loud and clear midway between pubes and umbilicus to the right of the mid-line. *Per vaginam* the sacral promontory bulges into the pelvic cavity. The vertebrae are convex from side to side, and the inter-vertebral discs can be plainly felt. Diagonal conjugate measures $3\frac{1}{4}$ inches. The cervix is almost fully dilated, and the head can be felt in the second position through the bulging membranes well above the pelvic brim. There is a fair amount of space at the sides of the pelvis.

December 28th, 4 a.m.—Membranes ruptured spontaneously, and a large quantity of liquor amnii escaped. Morphia gr. 4 was given hypodermically in order to diminish the uterine contractions, which were very powerful. Dr. Griffith arrived at 6.30 a.m., and proceeded to do Caesarean section without delay.

Operation.—An incision seven inches long was made into the peritoneal cavity. The surface of the uterus which presented in the wound was of a dark purple colour, and covered with tortuous and engorged veins.

An incision one and a half inches long was made at the junction of the middle and upper thirds of the uterus in the mid-line. Hemorrhage was arrested by digital pressure. When the uterine cavity had been opened the incision was rapidly enlarged to five inches with scissors, and the cut surfaces bled profusely. The uterine walls were then strained back over the buttocks of the child, which was found lying in the second vertex position. It was extracted without any difficulty. The uterus was at the same moment raised through the abdominal cavity and the bleeding controlled by manual pressure. The umbilical cord was tied and cut. The child at once cried and kicked, and was removed and wrapped up. The placenta, which occupied a median posterior position in the fundus, was expressed easily, and the uterus compressed with hot sponges.

Ergotine $\text{m} \times \text{v}$ were given into the buttock, but bleeding still continued to be profuse, and the uterine walls flabby. Five medium-sized silver wire sutures were passed at intervals of an inch through the whole thickness of the uterine wall and twisted. A douche of hot water (120°) was given between the lower sutures; the body of the uterus contracted firmly, though the lower uterine segment remained flabby. About ten fine silk sutures were passed through the superficial layers of the uterine walls, thus quite closing the wound. A good deal of blood still oozed through the lower part of the wound, and another hot douche was given through the vagina. The bleeding then ceased. The Fallopian tubes were tied with a single fine silk ligature. The abdominal wound was closed with fishing-gut sutures. The operation lasted one hour and ten minutes.

After-history.—Patient made an absolutely uninterrupted recovery. No sickness or rise of temperature. Bowels opened on fourth day. Stitches removed on eighth day, when the wound was found to have completely healed. She suckled her child for about a week, but it then was fed by hand, as her milk became very scanty.

Child was a girl. Length, $19\frac{1}{2}$ inches; weight, 7 lbs. 2 oz. It gained 1 lb. 2 oz. before leaving the hospital.

January 28th.—Mother and child discharged quite well.

CASE 3.—Caroline O—, æt. 37, primipara, admitted February 20th, 1896. Rickety flat pelvis.

Measurements: Iliac spines, 10 inches; iliac crests, $10\frac{1}{4}$ inches; external conjugate, $6\frac{1}{2}$ inches; diagonal conjugate, 3 inches; true conjugate, $2\frac{1}{4}$ inches. Height of patient, 4 ft. 6 inches; weight (after operation) 6 st. 7 lbs.

General characters of skeleton.—The ribs retain the traces of well-marked "beading," the lumbar spine presents distinct lordosis, and both femora are thickened and bowed outwards.

Previous history.—Was a patient at Great Ormond Street for rickets. She wore splints, and did not walk till she was three. Married two years; husband killed in accident eight months ago. Pregnancies 1; miscarriage at fourth month one year ago.

History of labour.—She was one of the patients of the External Midwifery Department. At 6 p.m. on February 19th patient began to have feeble and irregular labour pains. At 11 p.m. the membranes ruptured. When seen at 12 the pains had almost ceased, and the woman was quite comfortable. The sacral promontory could be easily felt, and was exactly three inches from the lower margin of the symphysis pubis. The foetal head was presenting in the first vertex position, the sagittal suture being, however, almost transverse. Some moulding had already occurred, but the foetal heart could be plainly heard all over the left half of the hypogastrium. The patient was conveyed at once to Martha Ward and Dr. Griffith sent for.

Operation.—At 1.45 a.m. the patient was anaesthetised, and the abdomen scrubbed with soap and water and washed with 1 in 40 carbolic lotion. The condition of the mother and child had remained unaltered.

An incision eight inches long was made through the abdominal walls, and the uterus presented in the wound; upon its anterior surface was a small pedunculated fibroid about the size of a Tangerine orange.

An incision an inch and a half long was made through the uterine wall at the junction of its middle and upper thirds in the mid-line. Two fingers were introduced into this, and it was enlarged by scissors to six inches. The hemorrhage, which was moderately profuse, was controlled by digital pressure on each side of the wound. A quan-

tity of liquor amnii mixed with meconium escaped. The child was found lying in the usual attitude with its back in front and to the left. It was extracted without difficulty, and the fundus uteri raised out of the abdominal cavity at the same moment, covered by a hot pad, and compressed from before backwards. This caused the expression of the placenta immediately. The umbilical cord was tied and the child removed. The hæmorrhage from the cut surfaces of the uterine walls was considerable—spouting in many places from the uterine sinuses. This was controlled without difficulty by grasping the uterus with a hand on each side of the wound, and compressing it from before backwards. Three moderate-sized silver wire sutures were then passed through the whole thickness of the uterine walls and temporarily tightened.

In the meantime continuous pressure had been kept on the fundus and the hot pads were frequently changed. But in spite of this the uterus was slow in contracting, and two hypodermic injections of ergotine of m v each were given. Six moderate-sized silk ligatures were passed through the superficial part of the uterine wall, and after they had been tied the bleeding became much less. Before the lowest suture was tied the uterine cavity was washed out (through the wound) with sterilised water at 120° .

The Fallopian tubes were tightly ligatured with fine silk towards their distal extremity. The small fibroid above mentioned being very vascular, was cut off, and the edges of the stump sewn together by a continuous silk ligature. The uterus was now well contracted and all hæmorrhage had ceased.

A few large clots were removed from the peritoneal cavity, and the abdominal walls sewn together with about twenty fishing-gut sutures.

After-history.—Convalescence proceeded without a single adverse symptom. Sickness was very slight and transient. No rise of temperature. Bowels opened on third day, after an enema and *Hæustus albus*. Wound dressed on the eighth day, and stitches removed. It had completely healed, except at the lower extremity, where the skin had been a little inverted.

Child was a boy. Measurements taken the day after the operation:—Length 20 inches; weight $7\frac{1}{2}$ lbs; circumference of head $14\frac{1}{2}$ inches, biparietal 4 inches, suboccipito-frontal $4\frac{1}{2}$ inches, vertico-mental $5\frac{1}{2}$ inches.

It took the breast for about a week, but this had to be supplemented by sterilized milk, and then the mother's milk ceased and the child was fed on milk and Mellin's food. Weighed $8\frac{1}{2}$ lbs. on leaving the hospital.

March 19th.—Mother and child discharged quite well.

Uncommon Causes of Skin Irritation.

By HENRY RUNDLE, F.R.C.S.



THE communication by Mr. W. T. Freeman in the *St. Bartholomew's Hospital Journal* of March on the above is of much interest. I can confirm his statement as to the effect produced on some people by contact with the leaves of the *Primula obconica*, having had two such cases under my care. These were ladies, in perfect health and hitherto free from skin trouble of any kind, who, after potting some primulas, found that their hands began to tingle and feel uncomfortable, then became rough and reddened, and afterwards presented an appearance allied to eczema; in one case the face was affected. A weak lotion of tar gave much relief. Recently, when going through the greenhouse of my friend Dr. Kyffin, at Forton, he told me that he had personally suffered from irritation of the hands caused by handling the *Primula obconica*, and since then he had always worn gloves when potting this plant. He has communicated to me the case of a gardener, who on different occasions had considerable swelling and irritation of the hands and arms, and his face also was affected. The man stated that each time the attack occurred he had been handling the *Primula obconica*.

I think that this form of skin trouble is not rare; occasional reference has been made to it in the *Field*, and I learn on inquiry from Messrs. Sutton, the well-known seed merchants of Reading, that the irritation caused by the leaves of the *Primula obconica* coming in contact with the skin is very common, but it does not affect all in the same manner, some of their men never being troubled with it. Mr. Jonathan Hutchinson (*Archives of Surgery*, vol. iii, p. 149) believes that "eczematous dermatitis" may be set going by a great variety of causes,—external heat, irritation of clothing, &c. To these causes, I think, may now be added the leaves of the *Primula*

obconica, and this is probably the only one of the family that has the power to cause the eruption.

Notes.

THE KIRKES' SCHOLARSHIP AND GOLD MEDAL has been awarded to G. A. Auden.

* * *

IN THESE DAYS of the highly-trained nurse, it seems strange that there should be any hospitals in civilised countries without properly trained nurses. It appears, however that this is the case, for the Secretary of State for India admitted in reply to Mr. Moon, the member for North St. Pancras, on March 19th last in the House of Commons, that several of the *garrison* hospitals in the East, notably at Aden, are without any staff of trained nurses.

* * *

Dr. EDKINS has been again appointed to lecture in Advanced Chemical Physiology. He will give his lectures on Thursdays at one o'clock during the coming Summer Session.

* * *

Dr. CALVERT has been re-appointed Demonstrator in *Materia Medica* and *Practical Pharmacy*. He will give a course of demonstrations on Wednesday at nine during the Summer Session. He will also hold a practical laboratory class on two days a week.

* * *

Dr. BOWMAN has been appointed Assistant Demonstrator in *Materia Medica* and *Practical Pharmacy*.

* * *

WE HEAR that Mr. J. W. W. Stephens has been re-elected to the Treasurer's Research Studentship for another year.

* * *

THE HARVEY PRIZE has been awarded to F. C. Borrow. Certificates of honour have been granted to W. S. Danks and L. A. Walker.

* * *

THE "SENIOR PRACTICAL" has been secured by H. Burrows. F. C. Borrow is second, S. R. Scott third, C. S. Frost fourth, W. H. Leonard fifth, H. S. Thomas sixth, W. S. Danks seventh, and T. B. Haig eighth.

* * *

THE "JUNIOR PRACTICAL" has been gained by A. E. J. Lister. A. T. Compton is second, C. A. S. Ridout third, S. R. Whittaker fourth, G. M. Seagrove fifth, J. S. Williamson sixth, J. C. Marshall and A. T. Pridham (equal) seventh, A. R. Tweedie ninth, and A. H. John tenth.

* * *

THE HICHENS PRIZE has been taken by F. R. Brooks.

* * *

THE SENIOR SCHOLARSHIP in Anatomy, Physiology and Chemistry has been awarded to H. A. Colwell.

THE JUNIOR SCHOLARSHIPS in Anatomy and Biology have been awarded to (1) R. H. Paramore, (2) A. R. Tweedie and J. S. Williamson (equal).

* * *

THE Finance Committee of the Amalgamated Clubs have decided to hold the Annual Dinner *always* on the first Saturday in June. The Past *v.* Present Cricket and Tennis matches are to be played on the same day.

* * *

THE Jacksonian Prize Essay for 1895 on "The Etiology and Treatment of Tetanus" has been written by Dr. Kanthack. We congratulate Dr. Kanthack heartily.

* * *

THE next course of Elementary and D.P.H. Bacteriology will begin early in May. Names to be sent to Dr. Shore as soon as possible.

* * *

THERE are a number of vacancies for clerks in the Pathological Department.

* * *

A SPECIAL COURSE in Operative Surgery for the Final Fellowship will commence on April 27th at 4.15. Names to be sent in to Morris as soon as possible.

* * *

WE HAVE received from Dr. Theo. Mailler Kendall, of Sydney, New South Wales, an old Bart.'s man, a very interesting report showing the good effect of sanitary legislation in decreasing the mortality from enteric fever in Sydney.

* * *

THE FINAL match for the Rugby Cup was played on the Richmond Athletic Ground on March 17th, when St. Thomas's beat St. George's by three tries to a goal—nine points to five. We most heartily congratulate St. George's on the good form they showed. Their try was obtained by Mr. H. N. Coltart, their captain.

* * *

BART.'S MEN, old and present, will all be interested to hear that the Nursing Home at Gordon House, Holles Street, Cavendish Square, lately under the control of Mrs. Bedford Fenwick, has been taken over by Mrs. Launcelot Andrews (late Sister John) and Miss Bristow (Sister Martha) in joint partnership. We heartily wish the enterprise success, though when one thinks of the individuality of the two ladies concerned, one cannot for a moment doubt but that success must be an absolute certainty.

* * *

WE SHALL all be sorry to lose Sister Martha, and it will be long ere one will feel at home in Martha in her absence.

* * *

MR. T. HARRISON BUTLER, M.B., B.Ch.Oxon., has been elected to the Radcliffe Travelling Fellowship of the University of Oxford.

* * *

R. JAMES NORMAN VOGAN, aged 10 years, who is a candidate at the May Election for the Royal Medical Benevolent School, Epsom, is the son of James Norman Vogan, F.R.C.S. James Norman Vogan was House Surgeon and Assistant

Electrician at Bart.'s in 1884, and afterwards practised at Ipswich until his death in 1889. Votes are asked for his son, who is left quite unprovided for, his mother having died in 1887.

Proxies may be sent to Miss Vogan, 125, Lee Road, Blackheath, S.E.

Amalgamated Clubs.

ATHLETIC CLUB.

A GENERAL MEETING of the Athletic Club was held on Tuesday, March 17th, 1896. The following gentlemen were elected officers of the Club:

President.—A. A. Bowlby, Esq., F.R.C.S.

Vice-Presidents.—H. M. Fletcher, J. A. Hayward, P. Furnivall, B. C. Green.

Hon. Secs.—G. W. Stone, W. F. Bennett.

Captain.—S. Mason.

Committee.—P. W. James, W. N. Barron, A. Hay, J. Johnston, S. F. Smith, C. V. Cornish, J. W. Nunn.

CRICKET CLUB.

FIXTURES FOR 1896.

Saturday, May	2nd, Opening game	at Winchmore Hill.
Wednesday, "	6th, 1st XI <i>v.</i> Next XVI	" " "
Saturday, "	9th, Stoics	" " "
" "	16th, Barnet	" " "
Wednesday, "	20th, Richmond	" Richmond.
Thursday, "	28th, Crystal Palace	" Crystal Palace.
Saturday, "	30th, Kensington Park	" Kensington Park.
" "	June 6th, Past <i>v.</i> Present	" Winchmore Hill.
Wednesday, "	10th, Streatham	" Streatham.
Saturday, "	13th, R.I.E.C.	" Cooper's Hill.
Wednesday, "	17th, Cheshunt	" Cheshunt.
Saturday, "	20th, "	" " "
Wednesday, "	24th, Ealing	" Ealing.
Saturday, "	27th, M.C.C.	" Winchmore Hill.
Saturday, July	4th, Henley-on-Thames	" Henley.
Wednesday, "	8th, Hornsey	" Winchmore Hill.
Saturday, "	11th, Nondescripts	" " "
" "	18th, P. E. Tuckett's XI	" Twyford.

CRICKET MATCH.

PAST *v.* PRESENT.

To be played on Saturday, June 6th, 1896. Will all old Bart.'s men who wish to play in this match kindly send their names to the Cricket Secretary as soon as possible?

Lawn Tennis Match.

PAST *v.* PRESENT.

To be played on Saturday, June 6th, 1896. Will any old Bart.'s men who would like to play in the above match communicate as soon as possible with the Hon. Sec. of the Lawn Tennis Club?

United Hospitals Boxing Competitions.

THE Competitions winding up this season was held at the headquarters of the 1st Middlesex R.V. in Davies Street, W. There was a good ring in the centre of the room, so that everyone present had a good view. The attendance was very fair. The first event:

LIGHT WEIGHTS (under 10 st.).—W. A. McEnery, Middlesex, beat C. W. Wingman, University; C. G. Meade, St. Bartholomew's, beat R. Cogan, Guy's. Meade showed very good form, and the final was looked forward to with interest, but unfortunately McEnery was disabled and could not enter the ring again, so Meade was declared the winner.

MIDDLE WEIGHTS (under 11 st. 4 lb.).—W. L. Griffiths, University, beat C. Kinsey Morgan, Guy's. G. R. Baker, Bartholomew's, sparring a bye with Prof. A. Bowman.

BANTAM WEIGHTS (under 8 st. 4 lb.).—W. M. Price, Guy's, was unable to appear, but had a very good substitute in L. Pern, who beat C. Ruttledge, University. This was followed by some very good exhibition sparring by E. H. Perrin and V. N. Christy, then by the well-known W. J. King, ex-heavy weight amateur champion, and Prof. Bill Natty, and by F. S. B. Hollis and A. Vanderhout.

FEATHER WEIGHTS (under 9 st.).—F. W. Chandler, University, beat W. G. Graham, St. Bartholomew's. The former showed better form than his opponent, and the judges were divided as to their verdict. It was referred to Mr. Cox, who acted as referee, his decision being in favour of Chandler.

HEAVY WEIGHTS.—C. M. Rowe, University, beat J. C. S. Dunn, St. Bartholomew's. Rowe did most of the leading; Dunn ought to have commenced as he left off, as he was going fairly well and strong at the finish. Rowe was almost knocked out in the third round, but Dunn did not follow up his advantage.

FINAL MIDDLE WEIGHTS.—W. L. Griffiths, University, beat G. R. Baker, St. Bartholomew's. Baker was knocked out early in the second round.

Up to Date.

"Oh, doctor! I have come to you
To ease me of my pain;
I long to see the needle in
My foot come out again."

The wily surgeon straightway gets
His pot of Röntgen rays,
And on the plate so sensitive,
The fairy foot he lays.

In haste he seeks his darkened room,
Develops up the plate;
And, by the rays of X alone,
He sees his patient's state.

The needle now is soon withdrawn,
The patient pleased as he;
She glad to have the needle out,
And he to get his fee.

K.

A Curious Epitaph.

A CORRESPONDENT has sent us the following epitaph which he has come across in the old churchyard at Stockbridge—

In memory of
John Bucket,
Many years Landlord of the King's Head Inn
In this Borough,
Who departed this life Nov. 25, 1802,
Aged 67 years.

And is, alas! poor Bucket gone?
Farewell convivial honest John,
Oft at the well by fatal stroke,
Buckets like pitchers must be broke.
In this same motley shifting scene
How various have thy fortunes been!
Now lifted high, now sinking low,
To-day thy brim would overflow,
Thy bounty then would all supply
To fill and drink and leave thee dry,
To-morrow sunk as in a well,
Content unseen with truth to dwell.

But high or low or wet or dry,
No rotten stave could malice spy.
Then rise, immortal Bucket, rise,
And claim thy station in the skies,
'Twixt Amphora and Pisces shine,
Still guarding Stockbridge with thy sign.

Round the Fountain.

By LINCOLN CRANBORN.



HEY were talking in the Square, the Fresher, the Chronic, and the Enthusiast, who being by nature utterly opposed were by instinct the greatest of friends, which is another proof that instinct is frequently antagonistic to nature,—of that, however, another time.

"The subject of dress," remarked the Fresher, "is of great interest to many people."

"You notice it most in the Cambridge man," added the Chronic.

"I would divide it into four heads," explained the Enthusiast: "The man who can't dress—the man who can dress—the man who won't dress—and the man who is too poor to dress."

"The first division," said the Chronic, "is the largest of the four."

"And contains the cleverest men," sighed the Enthusiast, who wore a turn-down collar.

"Not to mention the most objectionable," said the Fresher, who parted his hair in the middle.

"Many years ago," began the Chronic, "a long time before students were confused with cabmen—"

"You are referring to the shelters?" interrupted the Fresher.

"I am," replied the Chronic, looking pleased, and proceeding, "before that time dress was to the student as sarcomata to a physician, little understood—"

"You think we are being educated?" demanded the Enthusiast, with a sneer, "for my part I think dress, as such, wholly unworthy of consideration."

"You will lose an appointment," remarked the Chronic.

"Not being understood it was entirely ignored, with the result that its laws are even now but imperfectly followed. But let us take some examples: That man over there in black tails and a bowler is an insult to the æsthetic—"

"I have noticed they go with piety and self-satisfaction," murmured the Fresher.

"And the lowest seats in the theatre," added the Enthusiast, not a bit abashed.

"I think," went on the Chronic, "that brown boots and a top-hat are bad form—"

"Form is purely comparative," said the Enthusiast.

"The worst of comparisons is the unpleasantness of their truths," remarked the Fresher.

"The superiority of the Cambridge man lies in his dress"—continued the Chronic.

"And in his running," exclaimed the Fresher, who adored the merely animal.

"The intense style I regret is becoming prevalent; I mean long hair, a vacant look, and gold eye-glasses; it denotes a craving for distinction which is most unhealthy in the young mind."

"Which is the most objectionable, an opera hat or a cap?" inquired the Enthusiast.

"Or the man that wears them?" put in the Fresher.

"You seem to think that dress is necessarily frivolous," remarked the Chronic with great severity.

"But erudite works have been written about it, notably *Sartor resartus*; it is besides of peculiar significance to the practitioner and inevitably a reflection of the character. For instance, a cap and a yellow coat—"

"And a button-hole," suggested the Fresher, who noticed the allusion.

"—are emblematic of book-makers and Peckham Rye, while a frock coat as invariably signifies an exam., or an aunt in town."

"Why shouldn't a man dress as he likes?" asked the Enthusiast.

"He does," replied the Chronic, "and the results are disastrous. But let us go to lunch."



Scene in the Surgery.

DRESSER (*log.*).—Well, my good woman, what can I do for you?

PATIENT.—Just run and fetch us a doctor, there's a good boy.

Notes from the Wards.

House Physician going his night round, addressing Patient, newly admitted.

H.P. Well, how do you feel now?

Patient. Ever so much better, thank you sir, since I had the gas.

H.P. The gas?

Patient. Yes, sir, nurse gave it me in a tube under my arm.

[Did he mean the thermometer?]

Cases of Special Interest.

Medical.

Mark, bed 4.—Pernicious anæmia.
Mark, bed 26.—Locomotor ataxia.
Matthew, bed 1.—Paralysis agitans.
Matthew, bed 9.—Pernicious anæmia.
Colston, bed 15.—Exophthalmic goitre in a man.
Colston, bed 19.—Enlarged spleen.
Rahere, bed 9.—Aneurysm of arch of aorta.
Rahere, bed 19.—Aortic and mitral disease.
Hope, bed 2.—Rheumatoid arthritis.
Hope, bed 11.—Fibrosis of lung.
Faith, bed 10.—Aphasia.
Faith, bed 21.—Hemiplegia.
John, bed 4.—Alcoholic neuritis.
John, bed 5.—Anorexia nervosa.
John, bed 9.—Cerebral embolism.

Junior Staff Appointments.

The following appointments have been made:

HOUSE PHYSICIANS TO—

	SENIOR.	JUNIOR.
<i>Dr. Church</i>	G. R. Fox, M.R.C.S., L.R.C.P.	A. Woodward, M.R.C.S., L.R.C.P.
<i>Dr. Gee</i>	F. C. Poynder, M.B. (Oxon.).	S. Gillies, M.B. (Lond.).
<i>Sir D. Duckworth</i> ...	R. Michell, M.B., B.C. (Cantab.), F.R.C.S.	R. H. Crowley, M.D. (Lond.).
<i>Dr. Hensley</i>	F. M. Burnett, M.B. (Lond.).	W. E. N. Dunn, M.R.C.S., L.R.C.P.
<i>Dr. Brunton</i>	D. W. Collings, M.B. (Lond.).	C. E. Hedges, M.B., B.C. (Cantab.).

HOUSE SURGEONS TO—

	SENIOR.	JUNIOR.
<i>Mr. Smith</i>	S. Cornish, M.R.C.S., L.R.C.P.	G. V. Worthington, M.B., B.C. (Cantab.).
<i>Mr. Willett</i>	L. Giles, M.A., M.B. (Cantab.).	E. W. Ormerod, M.B., B.C. (Cantab.).
<i>Mr. Langton</i>	C. M. Hewer, M.R.C.S., L.R.C.P.	T. P. Legg, M.R.C.S., L.R.C.P.
<i>Mr. Marsh</i>	H. Marshall, M.B., B.C. (Cantab.).	F. W. Robertson, M.R.C.S., L.R.C.P.
<i>Mr. Butlin</i>	W. G. Clark, M.B., B.C.	T. H. Butler, M.B., B.Ch. (Oxon.).

INTERN MIDWIFERY ASSISTANT.—F. Belben, M.A., M.B., B.C. (Cantab.), F.R.C.S.

EXTERN MIDWIFERY ASSISTANT.—W. E. Lee, M.B. (Lond.).

CHLOROFORMISTS.—Senior: H. J. Paterson, M.A., M.B., B.C. (Cantab.).

Junior: F. H. Lewis, M.A., M.B., B.C. (Cantab.).

OPHTHALMIC HOUSE SURGEON.—M. G. Pearson, M.R.C.S., L.R.C.P.

Appointments.

WHITLING, H. T. M., M.B., B.S. Durh., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Third Sanitary District of the Market Harborough Union.

ANDREWS, H. A., M.R.C.S., L.R.C.P., has been appointed House Surgeon to the Hull Infirmary.

HOUNSFIELD, S. C., M.R.C.S. Eng., L.R.C.P. Lond., appointed Second House Surgeon to the East Suffolk Hospital, Ipswich.

JONES, W. BLACK, M.D., B.S. Lond., appointed Resident Physician at the Bathing Establishment at Llanngammarch Wells, Central Wales.

LAMPLOUGH, C., M.R.C.S. Eng., L.R.C.P. Lond., appointed House Physician, City of London Hospital for Diseases of the Chest, Victoria Park.

MEAD, G. B. O., L.R.C.P. Edin., M.R.C.S., has been re-appointed Medical Officer by the Newmarket Urban District Council.

WIGHTMAN, C. FRANK, F.R.C.S. Eng., appointed Senior House Surgeon to the Bolton Infirmary.

THORNE-THORNE, BERTHOLD B., M.D. (Durham), B.S., M.R.C.S., has been appointed Honorary Physician to Saint Peter's Convalescent Home, Woking.

SANTI, PHILIP R. W. de, F.R.C.S., appointed Assistant Surgeon (vice C. Stonham) and Aural Surgeon to the Westminster Hospital.

Examinations.

FINAL L.S.A.—W. B. Welch having completed this examination has been granted the diploma of L.S.A.

SOCIETY OF APOTHECARIES, PRIMARY EXAMINATION.—*Anatomy and Physiology*: T. B. Haig, R. Storrs, L. E. Whitaker, E. D. Wortley, T. L. Wyndham. *Anatomy*: R. F. Ellery, A. Farrington. *Physiology*: H. D. Everington, E. W. Lowry, J. H. Rhodes.

New Productions.

MESSRS. BURROUGHS, WELLCOME & Co. have supplied us with samples of their tabloids for the preparation of solutions to be used in the method of Dr. C. L. Schleich of Berlin for the production of local anaesthesia by infiltration. These tabloids overcome the tendency of anæsthetic solutions to decompose; they are prepared in three strengths, and produce respectively the "strong," "normal," and "weak" solutions when dissolved in 100 minims of water. Each tabloid contains Morph. Hydrochlor. gr. $\frac{1}{10}$, Sod. Chlor. gr. $\frac{1}{2}$, and Cocain. Hydrochlor. either gr. $\frac{1}{10}$, gr. $\frac{1}{20}$, or gr. $\frac{1}{100}$ in accordance with the strength.

A NEW HUNGARIAN APERIENT WATER.—The Apollinaris Company, of 4, Stratford Place, have sent us specimens of the new Hunyadi Water which they are introducing under the name of "Apenta." It is a natural water, obtained from the Uj Hunyadi springs near Buda-Pesth.

The chemical composition of the water, according to the analysis of Professor L. Liebermann, Director of the Royal Hungarian State Chemical Institute in the Ministry of Agriculture, Buda-Pesth, is as follows:

Sulphate of soda	15'4320
Sulphate of magnesia	24'4968
Sulphate of lime	1'0989
Chloride of sodium	1'8720
Bicarbonate of lime	0'8843
Bicarbonate of protoxide of iron	0'0189
Silicic acid	0'0100

Besides these constituents, the water contains traces of lithium and potassium. The specific gravity, at 15° C., amounts to 1041'4. Professor Liebermann states that "in view of the fact that both the quantity of the solid constituents and also their relative proportions in the bitter water Uj Hunyadi corresponds generally to the proportions found also in other Ofen bitter waters—for instance, in Hunyadi Janos—the same considerations are guiding, from a medicinal point of view, in forming an opinion of water of the Uj Hunyadi springs. What is striking in the Uj Hunyadi water is the proportion between the sulphate of soda and the sulphate of magnesia, which is favourable for a bitter water. The quantity of the latter is the greater. According to all this, I do not hesitate to declare that I know of no stronger or more favourably constituted natural bitter water than the natural bitter water Uj Hunyadi." We think Apenta will constitute a serious rival to other natural aperient waters. It is agreeable to the taste, and while its prolonged use appears to produce no injurious effects it is an efficacious aperient.

Correspondence.

To the Editor of St. Bartholomew's Hospital Journal.

THE RUGBY FOOTBALL TEAM.

DEAR SIR,—Your last number contains a letter signed by "Rugger" which I think will produce a wrong impression in the Hospital, and lead men to think that the Rugby Football Club is still in the bad state it was three years ago.

If "Rugger" will look up our record for the last four years he will observe the following facts:

After being beaten by Guy's in 1893 by over 20 points, and by Thomas's in 1894 by a somewhat similar total, in 1895 we played a drawn game with Thomas's, and that with our full-back away. In the replayed tie we lost by 11 points, but five of our team had, or were recovering from, influenza, and two actually had temperatures of over 102° one hour before the match—wonder if "Rugger" would play under similar conditions!

This season we have played better matches than usual, and have won more of them. I believe it is the first time for some years that we have beaten R.M.C., and in the Cup Ties we beat Guy's easily, but lost to Thomas's by 6 points. On that day our men did not play up to form, and surely "Rugger" knows that every team has its off-day. I think that "Rugger" will allow that the team has much improved lately.

Now as to "Rugger's" four heads:

a. Granted we have a frightful apology for a second XV, whose fault is it but men of the "Rugger" type, who can play but won't?

b. Men out of their year are usually qualified (I hope "Rugger" is) or nearly so, and have no time for football. Besides, they are useless to us for Cup Ties.

c. Any new man who comes up with a reputation is at once tackled by the secretary or captain—thanks to Dr. Shore, who always lets us know of such men.

d. Our fixture card is *not* much worse than that of Thomas's. We play many of the same clubs, and usually give them quite as good a game as Thomas's do. Further, every year improves our card, thanks to the improved team and energy of our secretary.

Next "Rugger" complains of our back division. I defy "Rugger" to get a better lot out of the 600 men at present at Bart.'s. It is our misfortune, not our fault, that our back division is weak. Had not accident robbed us of our crack half-back, the result of the Thomas's match might have been different.

In conclusion let me state that it is men like "Rugger" who harm football at Bart.'s. Their one idea is to run down the men who are doing their best for the team, and whose efforts are at length meeting with some success. We can do no right, according to them, and from personal experience I know that it is hard enough to keep a XV together without being grumbled at by a set of ignoramuses like "Rugger." If "Rugger" has only heard the remarks about his

letter that I have, he will for the future leave things alone that he knows nothing about.

If "Rugger" answers this letter, as I hope he will, will he have the spirit to sign his name and let us know who our mistaken friend is?—Yours, &c., P. O. ANDREW.

To the Editor of St. Bartholomew's Hospital Journal.

MIDWIVES AND THE REMOVAL OF THE PLACENTA.

SIR,—May I, in the interest of midwives, be allowed to comment on the article in your last issue by Dr. Coles. Dr. Coles, in reporting a case of inversion of the uterus, says, "I believe that midwives always remove the afterbirth by pulling." It appears to me that this is a charge against midwives of as grave a nature as it is possible to make, and that it is only right in their interests to refute it. I hope Dr. Coles will believe my assurance that midwives do *not* always remove the afterbirth by pulling. I for one do not, neither, I am sure, do any of the pupils of St. John's Maternity Home where I received my training; indeed, I have yet to learn of the training school which instructs its pupils to remove the placenta by traction on the cord.

It would be interesting to know what were the qualifications of the person who attended the case in question, for the name of midwife. That a properly qualified midwife should leave the patient for half an hour or more to wash the baby, while the placenta remained unexpelled, appears incredible; that she should deliberately assist her patient out of bed the day after confinement seems still more so. I venture to think that if this person's right to the name of midwife were inquired into, it would be found that she belonged to that class of people who put a card "Midwife" in the window when other work fails, and whose single qualification is that they are "charwomen who are not busy." If this be so, it only points the moral that some legislation on this subject is urgently needed, for it is intolerable that women who have honestly undergone a severe and expensive training in order to qualify themselves for the work which they profess to be able to do, should be confounded with the absolutely ignorant, not only by the general public, but even by medical men themselves. That such legislation should include a clause requiring all who henceforth aspire to qualify as midwives, to produce a certificate of general training, is, I think, a necessity if it is to be established on a satisfactory basis.

From a midwife's point of view, perhaps I may say in answer to the questions put to and by Dr. Coles—

1. That the inversion was in all probability due, as he says, to traction on the cord, that probably this was at first incomplete, as from the sudden urgent symptoms it would appear that further inversion took place when the patient got out of bed, and certainly this fact, combined with the bearing-down movement made in the effort to pass water, would be quite enough to account for complete inversion.

2. For the fact that inversion can occur spontaneously I believe Dr. Galabin is responsible.

3. One is always taught that it can be caused by unskilful expression, and no doubt this is the case, though I am able to say that during the time I was responsible for the management of St. John's Maternity Home, Battersea, and either saw or had reported to me some 1600 or more cases, there was not numbered amongst them one of inversion of the uterus.

4. The inversion should probably have been detected at the time, but a person who would leave a uterus which still contained a placenta while she washed the baby, would not be likely to ascertain before she left the case that the uterus was contracted and of normal shape.

For the sake of those midwives who care for and know something about their work, I hope you will be good enough to insert this letter in your JOURNAL.—I am, Sir, yours faithfully, MARGARET BREAY, Cert. St. Bartholomew's Hospital; Certified Midwife, L.O.S.

Diplômée.

S. JOHN'S HOUSE, NORFOLK STREET, STRAND,
March 31st, 1896.

To the Editor of St. Bartholomew's Hospital Journal.

MIDWIVES AND THE REMOVAL OF THE PLACENTA.

SIR,—After reading Dr. Coles' notes on "Two Obstetric Cases of Interest," it struck me that the following case might be of use in finding an answer to the questions enumerated. A year or two ago I received an urgent message, "as the midwife could not get the afterbirth away, and would I come at once." On entering the room I found the patient pulseless and apparently moribund. Seeing no time was to be lost, I ordered some brandy to be poured down her throat, while I, on examination, found a large bleeding mass pro-

truding from the vagina. Seeing at a glance that the uterus was inverted, and that the bulk of the placenta still adhered to it, I carefully tore off the latter, and grasping the uterus in my hand pushed my whole fist gently but firmly up into the pelvis. A distinct jerk was felt as the uterus returned to its normal position. Efforts were then made to restore animation, and the patient gradually rallied and made an excellent and speedy recovery. The diagnosis was easily made, although the funis had been pulled off the placenta by the efforts of the midwife. The wonder is these cases do not occur more frequently, as it is a very common practice for midwives not only to pull on the funis but to make the patient sit over hot water at the same time! I should like to see the questions answered by some one "with authority," but it is my humble opinion that the position of the uterus in the pelvis as well as the condition of the patient are important factors. In my case the patient was a languid, anæmic, relaxed sort of person, and the uterus lay low down in the pelvis with its axis more in the axis of the outlet than in its normal position.—Yours truly, ALEXANDER BOSWELL, Ashbourne.

To the Editor of St. Bartholomew's Hospital Journal.

CAISSON DISEASE.

DEAR SIR,—Dr. Maidlow's article in the last number of the JOURNAL is a specially interesting one to me, and I consider his remarks lend further weight to the argument that the symptoms of aëronauts and of caisson disease are due to the same cause, viz. the mechanical effect of rapidly reduced atmospheric pressure, and that in no sense are the two diseases comparable to *mal de montagne*.

Dr. Maidlow says that I do not directly describe aëronautic sickness. I certainly meant to convey in my remarks the impression that the symptoms of caisson disease and of aëronauts are precisely similar, and therefore I placed them under the same heading.

I am inclined to regard any symptoms appearing beyond 170 or 190 feet as due to the mechanical pressure on the surface and organs of the body, which must, of course, make itself felt after a certain time, however gradually the pressure be increased. Gradually diminished atmospheric pressure alone can never produce symptoms. As regards the cause and pathology of caisson disease, one of the best papers, I think, on the subject is that of Dr. Howard von Renslaer, in the *Transactions of the Medical Society of New York* for 1891, where he gives the pathology as "Congestion and consequent malnutrition of all the organs, and especially of the spinal cord (myelitis)." He does not actually mention hæmorrhages as occurring, but it is evident this is merely a stage further in the pathological condition.—I am, sir, yours faithfully, MALCOLM L. HEPBURN.

LOWESTOFF; March 30th, 1896.

Reviews.

LEWIS'S NURSING CHART (H. K. Lewis) is designed for nurses' use, and places upon it are arranged for all the various observations that a nurse is expected to make in a case. They will certainly be found of great use by all nurses, but we question whether they will not tend to do away with those charming and most artistic productions in red and black ink which nurses told off to "special" duty delight so in preparing. In private nursing, where there is, as a rule, less time or opportunity for artistic effect, these charts will, we believe, be an unmixed advantage.

Pathological Department of the Journal.

SPECIMENS sent by subscribers to the JOURNAL will be examined in the Pathological Laboratory and a report furnished under the supervision of Dr. Kanthack, at the following rate:

	s. d.
Ordinary examination, Bacteriological or Pathological, such as tumour, membrane, or sputum . . .	2 6
Ordinary (qualitative) urine examination . . .	2 6
Any further report will be charged for at a special rate. If a mounted specimen is desired an extra charge of 1s. will be made. If	

a telegraphic report is required, the cost of the telegram will be charged in addition.

Specimens must be accompanied by the fee and a stamped addressed envelope, in which the report will be sent as soon as possible. Specimens, with, if possible, a short history of the case, must be addressed to "The Manager of the Journal," with "Pathological Department" written in some conspicuous place on the wrapper.

On application to E. H. Shaw, Museum Assistant, a set of bottles containing hardening fluids, and ready for sending away by post, can be obtained on remitting a postal order for 2s. 6d.

Births.

CROPPER.—On April 1st, at Syston House, Boscombe, Bournemouth, the wife of John Cropper, M.A., M.B., B.C.Cantab, of a daughter.

NASH.—On March 10th, at St. Peter's, Bedford, the wife of W. Gifford Nash, F.R.C.S., of a daughter.

Marriages.

FINCHAM—GIBBON.—On April 8th, at St. Mary's, Hornsey Rise, N., Ernest C. Fincham, M.R.C.S.Eng., L.R.C.P.Lond., only son of James Fincham, M.Inst.C.E., of Hobart, Tasmania, to Blanche, youngest daughter of the late Richard Gibbon, of Shanghai.

BOKENHAM—MAYO.—On April 8th, at the Parish Church, Cheshunt, by the Rev. F. Fox Lambert, Vicar of the Parish, assisted by the Rev. C. Bokenham, Vicar of Selhurst and uncle of the bridegroom, Thomas Jessopp Bokenham, M.R.C.S., L.R.C.P., of 10, Devonshire Street, Portland Place, W., son of T. C. Bokenham, Assistant Controller of Stamps, Somerset House, to Edith, eldest daughter of the late Charles W. Mayo and Mrs. Mayo, of Colesgrove, Cheshunt, Herts.

SHUTER—TIPPETT.—On Wednesday, 25th March, at the Parish Church, Chiswick, by the Rev. L. W. T. Dale, George Percy Shuter, M.A., M.B., B.C.Cantab, D.P.H., of Oaklands, Chiswick Lane, W., to Ellen Francis Tippet, of Cleveland House, Chiswick, second daughter of G. F. Tippet, of Bromley.

SMITH—BINDLOSS.—On April 8th, at Christ Church, Brondesbury, by the Rev. A. Scott, Vicar of St. Mary's, Paddington, J. Anderson Smith, M.D.Lond., eldest son of T. R. Smith, Esq., of Hull, to Amy Helen Maud, younger daughter of the late Rev. Edward Bindloss, of Archangel.

REID—MAWER.—On the 11th April, at Unity Hall, Wood Green, by the Rev. Dr. Mummery, Arthur Lestock Reid, M.R.C.S., L.R.C.P., to Leila Ada, eldest daughter of W. Mawer, of Southgate, Middlesex.

Death.

THORNE.—On April 7th, at Cannes, Annette Maud, only daughter of William Bezly and Annette Mary Thorne, of 53, Upper Brook Street, London.

BART'S MEN are specially asked to notice the fixture of the first Saturday in June for the Annual Dinner and Past v. Present Cricket and Tennis Matches.

ACKNOWLEDGMENTS.—Guy's Hospital Gazette, St. George's Hospital Gazette, St. Thomas's Hospital Gazette, St. Mary's Hospital Gazette, The Nursing Record, The Charity Record.